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# Voice over IP Business Models

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29 January 2004

Analysys

# Agenda

Why are we interested?

Five business models

What are the implications?

# Confusion prevails over VoIP

On the one hand:

- No money in it
- Hobbyists
- Small, but growing
- Hard to guarantee quality
- Not a 'no-brainer' if there is vigorous PSTN competition
- Very slow

On the other:

- Cheap and popular
- Much service innovation
- Corporate early adopters moving to VoIP now
- Better than PSTN
- Fast becoming very big
- Transformational

# “Nothing less than the demolition of Japan’s telecom industry”

— Wired Magazine, August 2003

**YAHOO! BB**  
JAPAN Broadband

Yahoo! JAPAN - 入会案内 - 会員情報 - ヘルプ

ナンバーワンで、  
ビービーしよう。

ヤフーBBは、会員数300万人の  
No.1ブロードバンドです。\*

Yahoo! BBの詳しい情報

簡単ラクして登録

Yahoo! BBの入会キャンペーン。

キャンペーン詳細



Source: <http://bbpromo.yahoo.co.jp>

Analysis

# Agenda

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Five business models

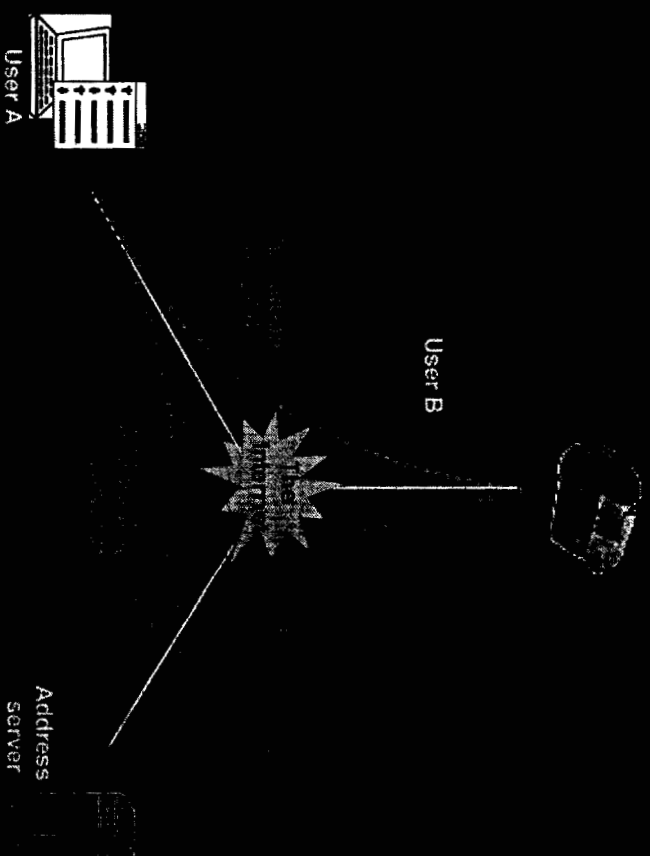
What are the implications?

# The five business models

- Self-provided 'DIY'
- Voice service independent of ISP – 'Vonage'
- Voice service sold by ISP – 'Yahoo!BB'
- Corporate internal use
- Carrier internal use

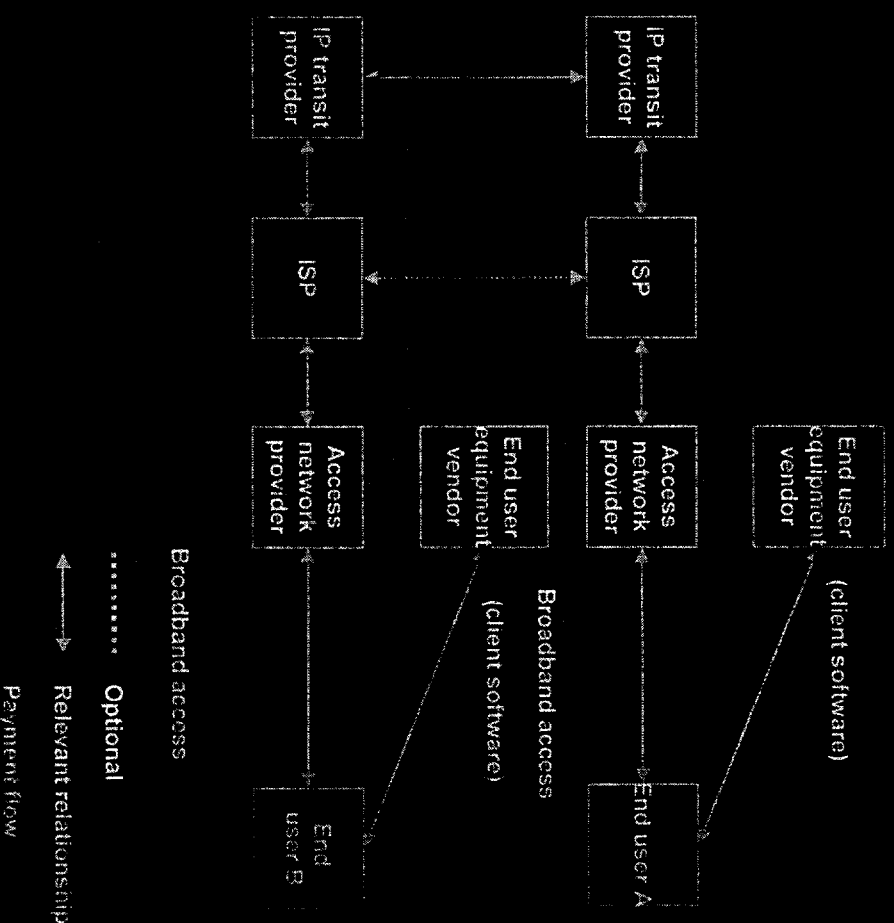
# Self-provided VoIP: DIY

- Software available to download from the Web
- Use a broadband connection to chat to friends online:
  - Skype, ichatAV, etc.
- Not simple to use: mostly hobbyists
- Not a cost saving on mobile networks
- 'Free' – but no interface to the PSTN



# Commercial model: DIY

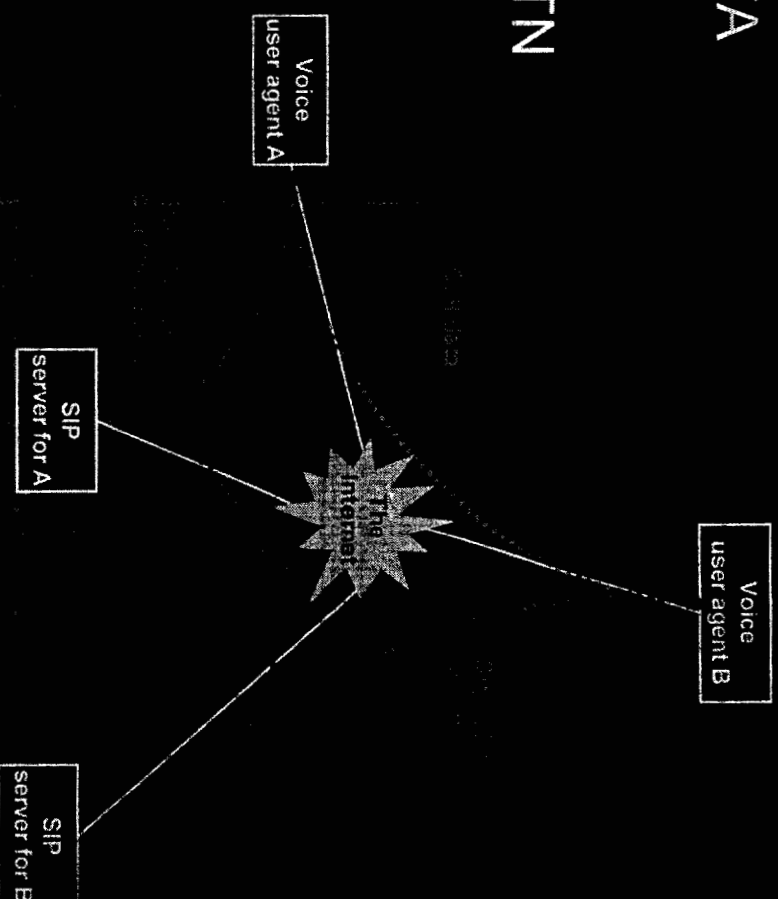
- I carry my own costs, you carry yours
- Traffic relies on existing Internet access
- Small amount of revenue may disappear from the telecoms market





# Voice service independent of ISP: Vonage

- Software download or an ATA
- Needs broadband
- Can provide interface to PSTN
- Can provide extra services:
  - virtual numbers
  - "Blast me"
- Can cause major changes in tariffing:
  - flat-rate national calls
- Hard to guarantee quality due to large number of intermediate players

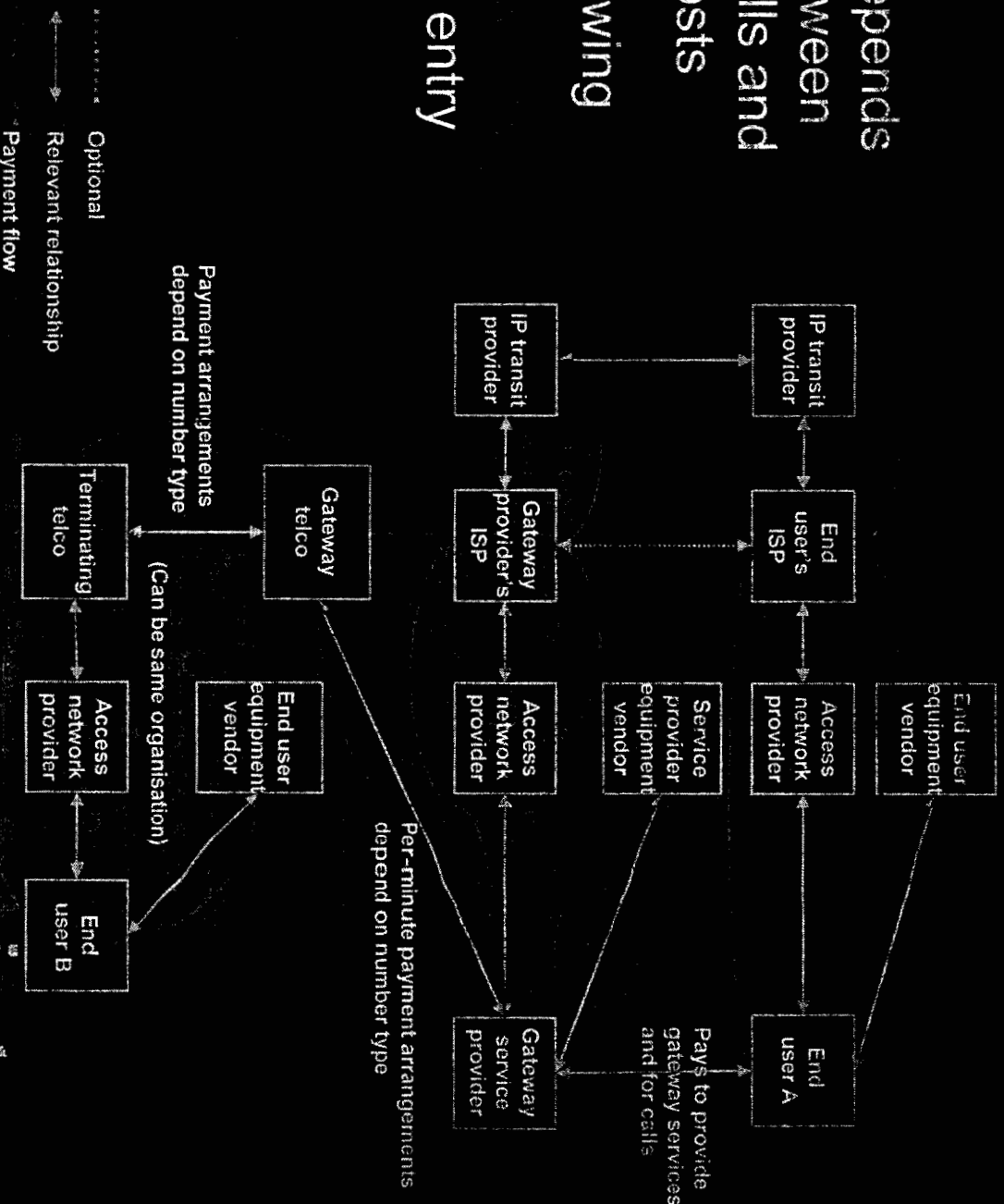


Note: this is a very simple case: many others are possible, including ones with no servers

Analysis

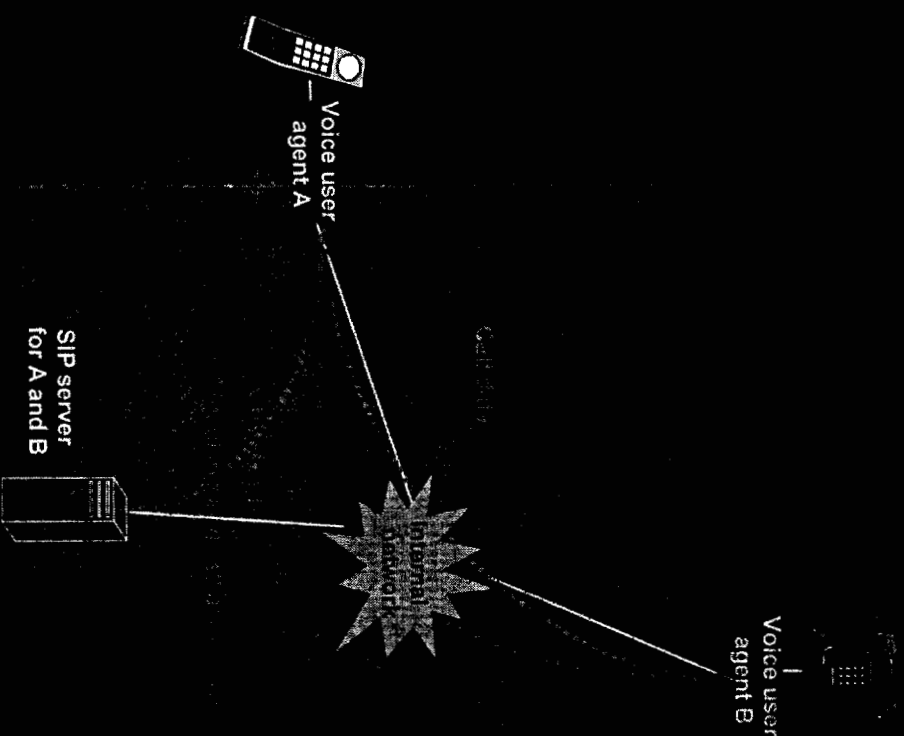
# Commercial model: Vonage

- Economics depends on margin between retail voice calls and termination costs
- Small, but growing (~100k in US)
- Low barrier to entry



# Voice service sold by ISP: Yahoo! BB

- Service provider controls access network
- Can guarantee QoS
- With high bandwidth codecs, quality can be better than the PSTN
- Typically bundles calls with Internet access
- ATA is integrated into DSL modem
- Yahoo!BB and Fion in Japan are the best known examples (5 million lines)

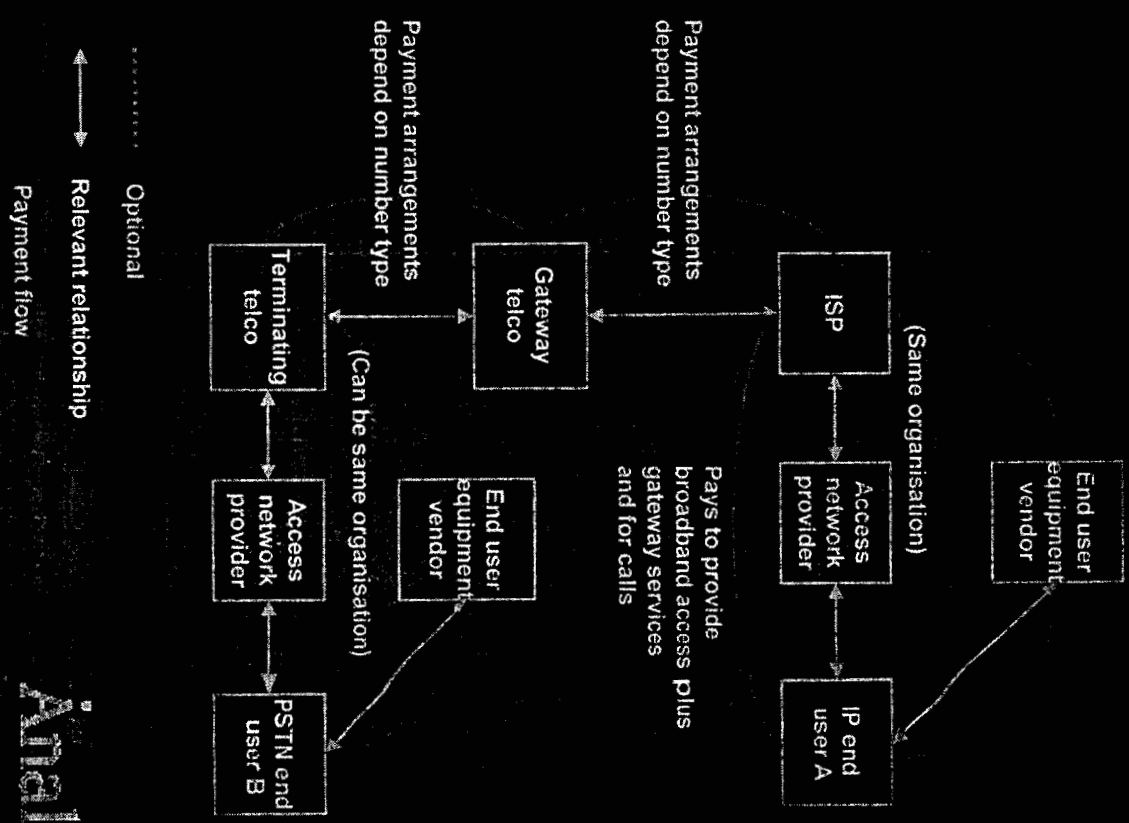


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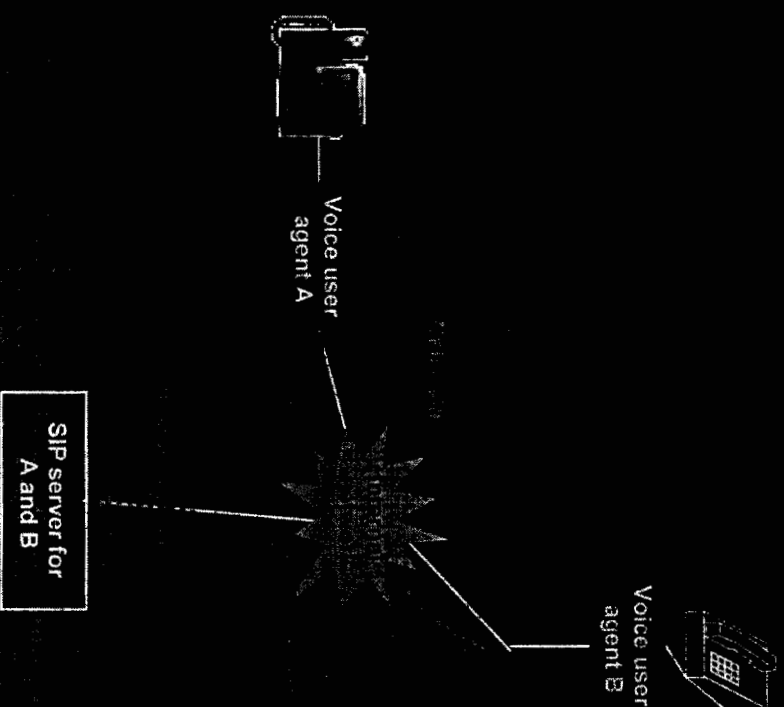
# Commercial model: Yahoo! BB

- Free on-net calls
- Cheap off-net calls (including to other VoIP users)
- But why isn't this more widespread?
- Not such a straight-forward cost saving if there is vigorous PSTN competition



# Corporate internal use

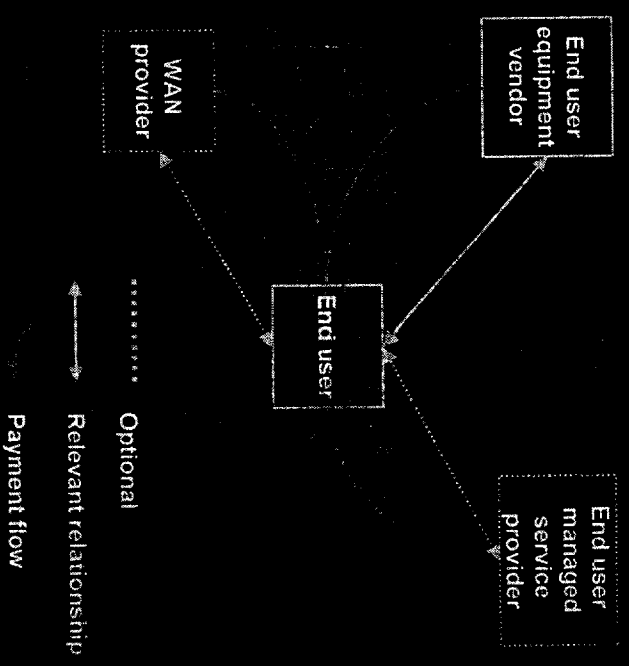
- Could be self-provided or outsourced
- Uses common IP network with data communications
- Big opportunity through the PBX replacement cycle



Note: this is a very simple case; many others are possible

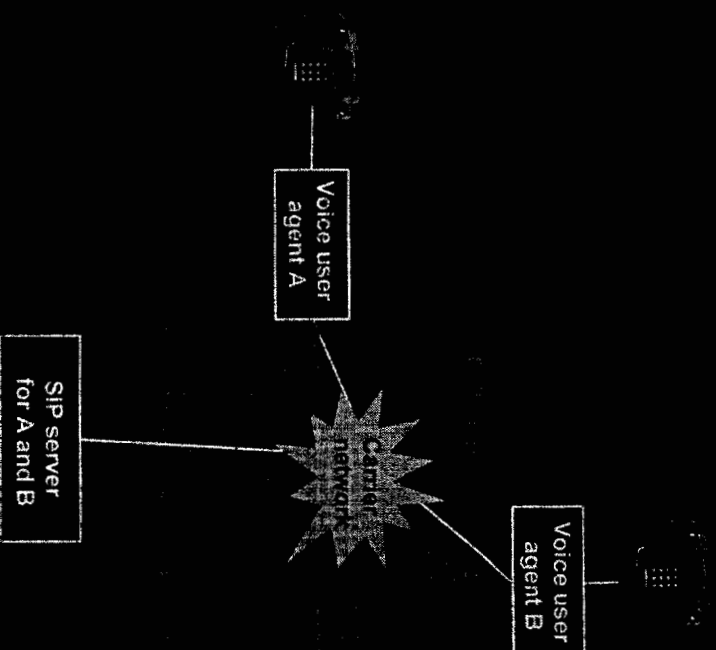
# Commercial model: Corporate internal use

- Now economic in greenfield sites
- Early adopters are using it
- Many users worried about resilience
- Opportunity for non-traditional vendors:
  - IT services
  - IT services outsourcers
  - IP equipment manufacturers



# Carrier internal use

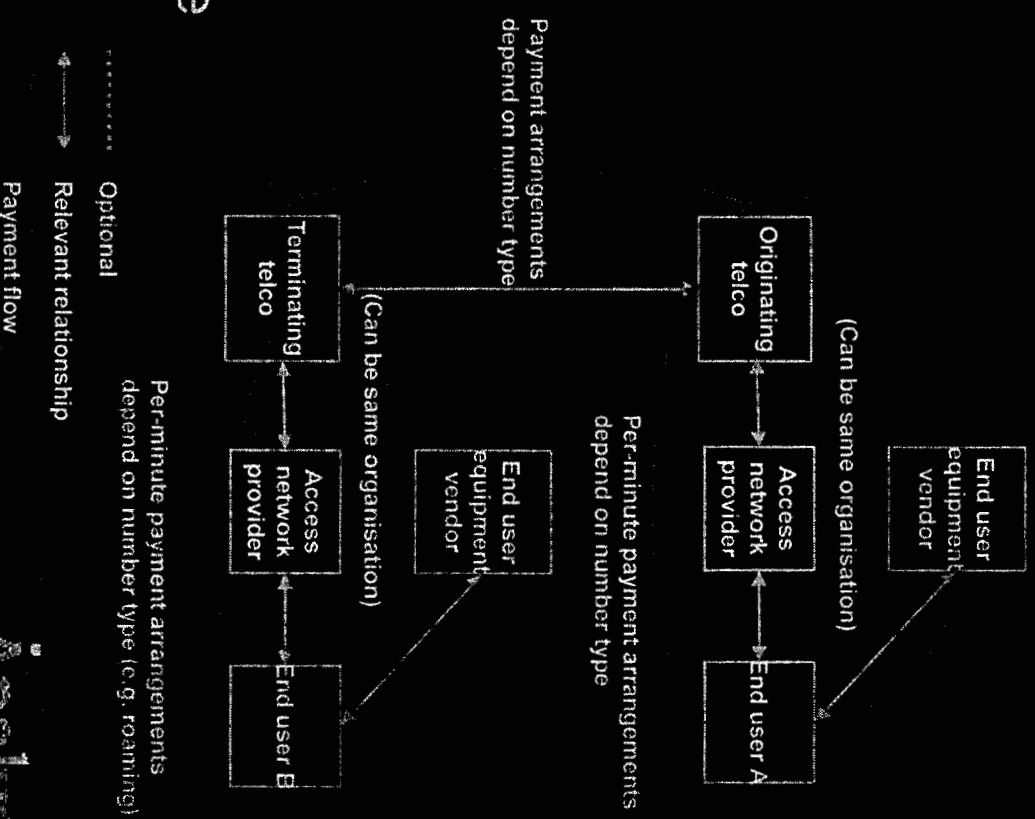
- Services continue as they are
- End-user is unaware of change:
  - does not necessarily use an IP device or get access to the Internet
- Last mile is unchanged
- Local concentrator, switch are utterly transformed



Note: this is a very simple case; many others are possible

# Commercial model: Carrier internal use

- Motivation is cost savings:
  - one network rather than N networks
- Capex required is very significant
- May take ten years to complete
- May take ten years before it starts!
- Regulatory issues need to be addressed





# US examples of the 5 models

- Self-provide – Net2Phone, Skype
- Access independent – Vonage
- BB service provider - Time Warner cable
- Corporate – BellSouth, SBC
- Carrier – most major telcos

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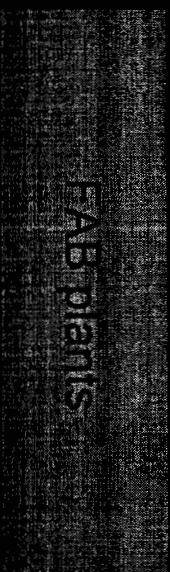
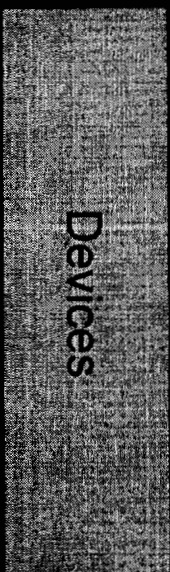
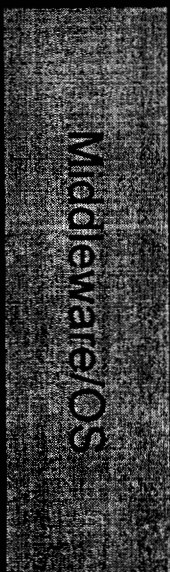
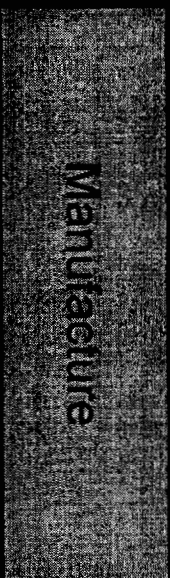
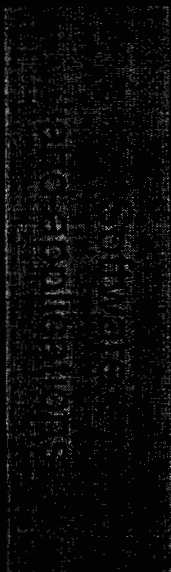
# What are the implications?

- Disintegration of the market structure
- Distribution of network intelligence to users
- Demand for quality versus price

# Industries dis-integrate ...

Automobile

Computer



Analysis

# ... and telecoms is no exception

Services

Network transmission

Equipment

Others

- Lower barriers to entry and exit
- Larger markets
- More opportunities for specialisation and market segmentation
- From economies of density to economies of scale

Analysis

# The traditional PSTN is a centralized system...

- Network intelligence is in the core of the network (switches, network operation center)
- Network operator controls most features (e.g. call waiting)
  - availability
  - billing
- CPE can only store very minor functionality (e.g. redial)

**VONAGE**  
THE BROADBAND PHONE COMPANY

THE RAPIDATA PHONE COMPANY

Dashboard Activity Billing Valuemail Account Orders

## Features

This page allows you to configure each feature included in your account.

## Dining 911

911 Dialing is NOT automatic. You must activate 911 Dialing for each number on your account. To activate or change activation information, choose a number below.

1-(202)-787-1969 • Dialing 911 F.A.Q.s

(All forwarding)

Configure your Vonage DigitalVoice™ number(s) to automatically forward your calls to any telephone number of your choice

1-(202)-787-1969

- Call Forwarding FAQ's

### Vehicle Settings:

**This page allows you to view and edit your Voicemail settings for your Vonage DigitalVoice™ number(s).**

1-(202)-787-1969

- Voicemail FAQ's

## Bandwidth Saver

Our bandwidth saver feature allows you to alter the sound quality of your call slightly to save valuable bandwidth

1-(202)-787-1969

- Handwritten Saver f.A.G.'s

## Hefes &amp; Friend

**For each person you get to subscribe to Vonage DigitalVoice, you earn credit towards your monthly bill**

- [Refer-A-Friend](#)
- [View all your referrals](#)

## Vorlage Software:

Stam



 Attribution 3.0 licence

1. *Staphylococcus aureus*  
 2. *Staphylococcus aureus*  
 3. *Staphylococcus aureus*  
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 10. *Staphylococcus aureus*

Michael L. H. and J. L. H.

[illegible]

1. *Chlorophyll a* and *Chlorophyll b* contents were determined using a spectrophotometer (Shimadzu UV-1601) at 663 nm and 646 nm, respectively. The total chlorophyll content was calculated using the following formula: Total Chlorophyll (mg/g) = (Chlorophyll a + Chlorophyll b) × 1000.

“*Chlorophyll a*”

100

10

# **Airline deregulation demonstrates consumers' willingness to trade-off price and quality**

- An argument for regulation was that it ensures a high-quality service
- Competition took place in service rather than price
- Airlines flew more direct routes with less concern about loads
- Deregulation let consumers choose the qualities that were important
- Consumers seem willing to accept more crowded planes, hubbing, and even pay for food to save on fares
- Consumers not willing to compromise on-time reliability
- Safety is still regulated



# What about telecommunications?

- Consumers of PSTN services enjoy extremely high quality services (99.999%)
- Mobile phone users willing to compromise voice quality and availability for convenience
- Do it yourself VoIP users willing to sacrifice voice quality for price
  - What about mass market?
  - What about corporate?

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